

TWO UNRECOGNIZED SHREWS FROM CALIFORNIA

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Continued studies upon American Soricidæ for the United States Biological Survey have disclosed two heretofore unrecognized forms from California. That their names may be available for other workers they are here described in advance of the complete report.

***Sorex obscurus parvidens* subsp. nov.**

SAN BERNARDINO DUSKY SHREW

Type-specimen.—No. 56,561, United States National Museum, Biological Survey Collection; ♂adult (teeth slightly worn), skin and skull; collected October 3, 1893, by J. E. McLellan. Original number 242.

Type-locality.—Spring known as Thurman's Camp, Bluff Lake, altitude 7,500 feet, western side of San Bernardino Peak, San Bernardino Mountains, California.

Geographic range.—Known only from San Bernardino Mountains, California.

Diagnostic characters.—Similar in size and color to *Sorex obscurus obscurus*; skull about the size of that of *S. o. obscurus*, narrower interorbitally, with distinctly flatter cranium, which is less expanded mastoidally (consequently the skull averages narrower in greatest lateral diameter); molariform teeth more deeply emarginate posteriorly, the unicuspid narrower, and the first incisors smaller.

Color.—*Winter pelage*: Unknown. Probably not essentially different from winter pelage of *S. o. obscurus*. *Summer pelage*: Similar to that of *obscurus*; upperparts between olive-brown¹ and buffy-brown, tending slightly toward Soccardo's umber, and gradually blending with color of underparts; underparts smoke gray more or less tinged with avellaneous or light ochraceous-buff; tail distinctly bicolor, olive-brown above, buffy brown below, darkening toward tip.

Skull.—Narrower interorbitally than that of *S. o. obscurus*, with narrower and distinctly flatter braincase, and, on the average, weaker dentition, the molariform teeth usually with more deeply emarginate posterior borders.

Measurements.—Type-specimen: total length, 105; tail vertebræ, 45; hind foot, 12.8 (measured from the dry skin by the writer). *Skull* of type-specimen: condylobasal length, 17.1; palatal length, 6.7; breadth of cranium, 8.1; inter-orbital breadth, 3.5; maxillary breadth, 5.0; maxillary tooth row, 6.2.

Remarks.—Only 6 specimens of this shrew have been examined, 4 of which are in Biological Survey Collection and the other 2 in the

¹ Colors here used are those of Ridgway, R., Color standards and coloromenclature, 1912.

collection of Mr. Donald R. Dickey, Pasadena, California. The rather flat and narrow skull of *Sorex o. parvidens*, combined with its weak dentition, distinguish it from other forms of the species *obscurus*.

***Sorex pacificus sonomæ* subsp. nov.²**

SONOMA SHREW

Type-specimen.—No. 19,658, Museum of Vertebrate Zoology, University of California; ♂ adult (teeth moderately worn), skin and skeleton; collected July 2, 1913, by Alfred C. Shelton. Original number 227.

Type-locality.—Sonoma County side of Gualala River, Gualala, California.

Geographic range.—Coast region of California from Point Arena, Mendocino County, south to Point Reyes, Marin County.

Diagnostic characters.—Similar to *Sorex pacificus pacificus* but averaging smaller, and a trifle darker and less reddish in summer pelage.

Color.—*Winter pelage*: Essentially like that of *Sorex p. pacificus*. *Summer pelage*: Averaging somewhat darker and less reddish than that of *S. p. pacificus*; scarcely more reddish or cinnamon than in winter pelage. Upperparts mummy brown or fuscous, the color of the upperparts extending well down over the sides; underparts between olive-brown and buffy brown, tending toward sepia; tail essentially unicolor, about same color as underparts.

Skull.—Similar to that of *Sorex pacificus pacificus*, but averaging smaller.

Measurements.—Type-specimen: total length, 133; tail vertebræ, 59; hind foot, 16. Skull of type-specimen: condylobasal length, 21.1; palatal length, 8.9; breadth of cranium, 10.3; interorbital breadth, 4.5; maxillary breadth, 6.3; maxillary tooth row, 8.1.

Remarks.—The southern form of *Sorex pacificus*, here described under the subspecific name *sonomæ*, is separable from true *pacificus* only in average differences of size and color. There are occasionally small specimens of the subspecies *pacificus* which match fairly well the larger specimens of *sonomæ*. On the whole, however, the differences are clearly marked.

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² I am indebted to Dr. Joseph Grinnell, Director of the Museum of Vertebrate Zoology, University of California, for the privilege of describing this shrew from the collection under his administration.